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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,245	03/25/2004	Mark Thomas Kief	169.12-0624	6709

164 7590 01/25/2007
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THE KINNEY & LANGE BUILDING
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MINNEAPOLIS, MN 55415-1002

EXAMINER

EVANS, JEFFERSON A

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/809,245

Applicant(s)

KIEF ET AL.

Examiner

Jefferson A. Evans

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-12,14-17,19-24,26,27 and 29-34 is/are rejected.
- 7) ☒ Claim(s) 4,13,18,25 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claims 1 to 34 are pending.

Specification

1. The abstract of the disclosure is objected to because of "means" in line 4.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5-11, 14-17, 19-24, 26, 27, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al (U.S. 6,807,094). Saito discloses bit lines and word lines of a MRAM that are clad in a soft magnetic material such as CoNiFe on up to three sides. Saito also discloses that this arrangement can be applied to a lateral or vertical write head (column 24 – lines 17 to 20). Saito discloses bias layer AF in the form of an antiferromagnetic layer.

Official Notice is given that it was notoriously old and well known in the art that a recognized standard structure for a lateral magnetic write head was of two poles connected by a magnetic via and a write coil wrapped about the via.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the clad conductor arrangement of Saito to a coil of a

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lateral magnetic head having the coil between poles and wrapped around a via connecting the poles. The motivation would have been: such was the well recognized standard arrangement in the art for such a head.

It is noted that in the response portion of the amendment filed 10-30-2006 applicant does not take issue with the Examiners above taking of Official Notice in the previous office action dated 7-24-2006. As a result, applicant is considered to have accepted said taking of Official Notice as appropriate.

4. Claims 1-3, 5-12, 14-17, 19-24, 26, 27, 29, 30, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al in view of Mochizuki et al (U.S. 7,054,105). Saito discloses that his clad conductor arrangement can be applied to a vertical head but does not disclose the specific structure thereof.

Mochizuki is an example of a reference disclosing a vertical magnetic write head and the common features of a vertical magnetic write head, including a main pole 1 and a return pole 3 with a write coil 2 between the main and return poles.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the clad conductor arrangement of Saito to a coil of a vertical magnetic head having the coil between a main pole and a return pole. The motivation would have been: such was the well recognized standard arrangement in the art for such a head.

It is noted that the coil of Mochizuki is close enough to the ABS to be considered adjacent to the ABS, but does not extend to the ABS itself and so can also be considered removed from the ABS.

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5. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al in view of Rizzo (U.S. 6,430,085), or Saito et al in view of Mochizuki et al further in view of Rizzo. Saito does not appear to indicate whether the cladding should be saturated or not during application of a write current.

Rizzo discloses that either part or all of the cladding may be saturated (note column 8 – lines 25 to 50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the cladding of Saito be partially or completely saturated during write current application, as taught by Rizzo. The motivation would have been: Rizzo teaches that such an arrangement was advantageous for enabling the cladding to best perform its designated function of controlling magnetic field flow.

Allowable Subject Matter

6. Claims 4, 13, 18, 25, 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Response to Arguments Filed 10-30-2006

Applicant contends that Saito just mentions in passing applying the clad coil approach to vertical recording heads and does not indicate how such an application would be created.

The Examiner's position remains that in applying the clad coil approach of Saito to a vertical or lateral recording head, one of ordinary skill in the art would have applied

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the clad coil to the most standard arrangements for vertical and lateral heads in the art at the time the invention was made, and that for vertical heads this would take the form of a main pole connected to a return pole with a wire coil there between, and for a lateral head would take the form of two connected poles with a coil there between.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jefferson A. Evans whose telephone number is 571-272-7574. The examiner can normally be reached on Monday to Friday, 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jefferson A. Evans
Primary Examiner


JEFFERSON EVANS
PRIMARY EXAMINER

1/21/07